

Having described the invention what is claimed for Letters Patent is:

Sub a1 1. An offender and victim collision avoidance and advanced warning system employing an offender's portable tracking apparatus responsive to a message from a wireless communication system for determining its own spatial coordinates from a Global Positioning System and communicating with an offender's body worn device and a central data base, the advanced warning system additionally comprising:

- (a) means to communicate simultaneously with a victim's portable tracking apparatus while communicating with the central data base;
- (b) means to communicate simultaneously with a law enforcement entity and the offender's supervisory authority while communicating with the central data base; and
- (c) means for confirming delivery of communications among the offender, the victim, the central data base, the law enforcement and the offender's supervisory authority.

2. The warning system according to claim 1 wherein the means to communicate in (a) and (b) is a connectionless oriented analog or digital wireless signal.

3. The warning system according to claim 1 wherein the communications are accomplished with a circuit switched connection oriented digital or analog wireless signal.

Sub a2 4. The warning system according to claim 1 wherein the offender's portable tracking apparatus sends a tamper signal during a prolonged absence of a wireless signal from the body worn device.

5. The warning system according to claim 1 wherein redundant communication is provided among the offender, victim, central data control, the law enforcement entity and the

~~supervisory authority.~~

6. The warning system according to claim 1 wherein a memory card stored in the offender's portable tracking apparatus provides a schedule of rules and location constraints to determine if a static violation by the offender has occurred.

7. The warning system according to claim 6 wherein the memory card additionally compares the current location of the offender's portable tracking apparatus to the location of a victim's portable tracking apparatus to determine if a dynamic violation has occurred and generates a warning signal to the victim if a constraint contained in the memory card is violated.

8. An offender and victim collision avoidance and advanced warning system using a tamper resistant offender's portable tracking device and an associated tamper resistant body worn device for use in a wireless communications system, the offender's portable tracking device determining its own spatial coordinates from a Global Positioning System, conveying its spatial coordinates to an associated portable tracking device and a central data base system, receiving spatial coordinates from the associated portable tracking device, sending messages through wireless digital notification devices, receiving responses from wireless digital notification devices and the offender's portable tracking device having

(a) a means to communicate using connectionless oriented analog or digital wireless messages directly and simultaneously with the associated portable tracking device, a digital wireless notification device, a central data base system and a wireline communication network notification device, and

(b) a means to communicate using circuit switched connection oriented digital or

analog wireless signals with the central data base system.

9. The warning system according to claim 8 wherein the offender's portable tracking device additionally includes a memory card and a processor for use with algorithms to (1) compare the current location of the offender's portable tracking device to a schedule of rules and location constraints stored in the memory card to determine if a static violation has occurred, (2) perform location data fusion processing by comparing the current location of the offender's portable tracking device against the location of the associated portable tracking device to determine if a dynamic violation has occurred, (3) generate instructional commands to an offender, (4) generate warning information messages to a victim, (5) generate notification messages to a supervising agency, law enforcement agency and a central data base system, (6) determine when the location and status message of the offender's portable tracking device is required to be sent, (7) determine when the location and status message of the associated portable tracking device is past due and (8) provide assured delivery of messages to offenders, victims, supervising agencies, law enforcement agencies, and central data base system.

10. The warning system according to claim 9 wherein the supervising agency creates or updates the schedule of rules and location constraints for the memory card in the offender's portable tracking device by uploading data to the memory card in the offender's portable tracking device using either connection oriented circuit switched signals or connectionless oriented analog or digital wireless messages.

11. The warning system according to claim 9 wherein the supervising agency creates or updates the victim's dynamic safety perimeter for the offender's portable tracking device by

uploading data to the memory card in the offender's portable tracking device using either connection oriented circuit switched signals or connectionless oriented analog or digital wireless messages.

Sub a3
12. In a method for use with a wireless communication system to determine by spatial coordinates the location of an offender's portable tracking apparatus adapted to communicate with the offender's body-worn device and a central data base, the improvement comprising:

- (a) providing multiple redundant communication paths to the central data base and from the central data base to the offender, and
- (b) providing simultaneous communication to a victim's portable tracking apparatus.

13. The method according to claim 12 wherein there is additionally provided a means to confirm delivery of the communications to the offender, victim and central data base.

14. The method according to claim 12 wherein there is additionally provided simultaneous communication to a law enforcement entity.

15. The method according to claim 12 wherein there is additionally provided simultaneous communication to an offender's supervisory authority.

16. The method according to claim 12 wherein the offender's portable tracking apparatus is provided with a memory card comparing the current location of the offender's portable tracking apparatus to a schedule of rules and location constraints stored in the memory card to determine if a static constraint violation has occurred.

17. The method according to claim 16 wherein the memory card contains instructions for performing location data fusion processing by comparing the current location of the

offender's portable tracking apparatus against the location of a victim's portable tracking apparatus to determine if a dynamic violation has occurred.

18. The method according to claim 12 wherein one communication path to the central data base and the victim's portable tracking apparatus is provided by a connectionless oriented analog or digital wireless signal.

19. The method according to claim 12 wherein one communication path to the central data base provided by a circuit switched connection oriented digital or analog wireless signal.

20. The method according to claim 12 wherein a signal from the central data base to the offender's portable tracking device upload's data to a memory card in the offender's portable tracking device.

21. The method according to claim 20 wherein the signal is provided by a connectionless oriented analog or digital wireless message.

22. The method according to claim 20 wherein the signal is provided by a connection oriented circuit switched message.